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WHAT DO WE PAY FOR?

F. C. KEIGHLEY, UNIONTOWN, PA.

We are a numerous company and we are apt to look at things in a great many different lights, especially so when we, disintegrate and resolve into the individual.

We, is a great body made up of many molecules, and each molecule is an individual — a man, and that man, may be a consumer of coal; a mine owner; a mine operator; a mine superintendent; a mining engineer; a mine foreman; a coal miner; a laborer or anything else in the occupations common and uncommon to mankind.

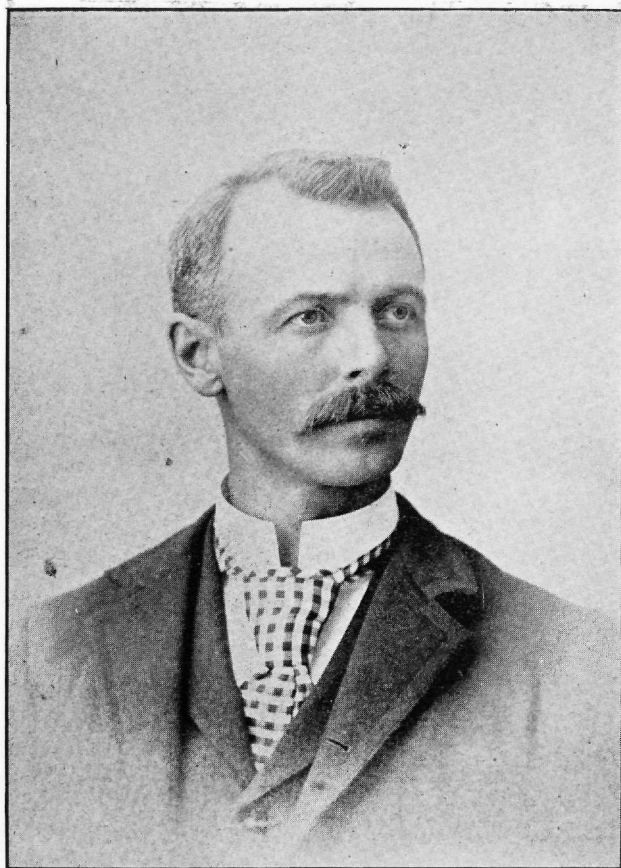
The question "What do we pay for", has been discussed hot and heavy for weeks at the plants I manage and after all our discussions and other cussins we have come to a deadlock — that is, the "knows" and the "does" have. The "knows" are in the majority. This battle of words all arose from the appearance of a very pretty little story (perhaps you have all read it) in some of the technical journals of the day but for fear some of you have not I will give you an outline of it — I cannot recall the exact language but it is something like this:

"Some time ago a certain mill owner went down to his office at nine o'clock in the morning" (observe the hour — when anything happens at our place the telephone bell generally rings just when I am doing my heaviest sleeping) well as I said before "nine o'clock" (please do not forget the hour) "and found" (what he might have found much sooner) "the mill stopped."

This was certainly bad, and no doubt the atmosphere was still worse just about that time, at least my observaion about mines at such times has led me to expect such a condition of the atmosphere and a decided commotion about the telephone booth and telegraph instrument.

"The mill was stopped and had been stopped" "stopped for hours" (it seems it started before nine o'clock, if the owner did not) well there was trouble — yes, quite a quantity of trouble and nobody to corner it, and that is strange for now days things are always cornered."

"The mill was stopped" because "a pesky little boiler feed pump had stopped and the engineer could not make it go." At



HON. FREDERICK C. KEIGHLEY



a coal mine the engineer would have gone sure, I am thinking, and I know you are too.

"An expert was sent for from a neighboring machine shop" (if he had just stopped at that shop what a waste of breath he would have saved me.) Mr. Expert (just squinted one eye at the pump and slapped it in the face with a tack hammer) "tapped it" so the story goes and away she went, and with it went, the whole of the immense concern, to work, as though nothing had ever been wrong.

"In a short time — (Oh! in how short a time, a bill will come) "a bill came for \$25.00 — just see what expertness will do.

Well there was more trouble. Bill too high. Must be scaled down. Returned. Bill comes back quite satisfactory, (more expertness) all because it reads:

| | |
|--------------------------------------|----------------|
| To fixing pump | \$.75 |
| To knowing how to fix pump | 24.25 |
| Total | <u>\$25.00</u> |

The age of miracles has not passed, ye doubters and unbelievers for Mr. "Know" alias "Expert" alias "Genius" by a mere change of figures and a flow of language makes a seventy-five cent bill cheap at twenty-five dollars.

That mill owner was a jewel. I wish he would go into the coke business.

Well that beautiful story (how sublime it is) has been seized by the hair of the head by the technical journals and dangled before the public as a bright and shining example of what it is to "know."

I have worked for mine owners who would have been mean enough to have asked me why I kept engineers that let the pump stop, and they would have told me very quickly they did not pay for "knowing" but for "doing."

That mill owner might have been satisfied that he was paying for what the expert knew, but in reality he was paying for what some one about his establishment had failed to do. The very fact that all the expert did, was to tap the pump and it started, proves that beyond a question. A better statement of the case would have been:

| | |
|-------------------------------------------------------------------------------------------------------------|-----------------|
| To fixing pump | \$.75 |
| To knowing how to fix pump | 24.25 |
| To loss of time, caused by man who did know how to keep the pump in order, but failed to do so | 75.00 |
| Total of bill | <u>\$100.00</u> |

This expense was all incurred by want of attention on the part of the man who had charge of the pump. I have heard that little story of "knowing how" repeated in a dozen or more forms, until I am sick.

Every man about the premises is now inflated with the idea that he is paid for what he knows, and I am just pig headed enough to insist that he is paid for what he can do and should do, and that brings us back to the title of the subject, "What do we pay for?"

Well if we happen to be a keen, shrewd man we pay for the best results that can be obtained or we wont pay at all.

If we happen to be the ordinary mortal we pay for all the mistakes of those we employ and as the ordinary mortal is immensely in the majority, the coal consumer pays for the mistakes of all connected with the business of coal mining. This covers the question in general, and now let us see how it is covered in detail. The mine owner or operator pays in lessened profits for all mistakes and negligence of his management, as well as for what the management does. The mine superintendent, mining engineer and mine foreman pay in worry, anxiety and hard work for all that is not properly done by those under them and for what they fail to do themselves.

The coal miner pays in physical exertion, hardship and degradation for all the poor work he does and so on ad infinitum.

A great deal of coal has been lost in the Connellsville coke region in the past and that loss probably amounts to fifty per cent. of the coal area worked over. Why was that coal lost? Some people say because they did not know any better. In some cases that perhaps was true, but not by any means was it true in all, for I can show you to-day mines where the same loss is going on. These people know better but the trouble is they do not act. If you were to go to them and tell them their methods were at fault they would say, we "know" it, but just at this time we need a large output and we have got to get it out. It is clear then that these people will pay for what they are now doing and not for what they "know." When I was a boy I worked more or less on the farm and I have distinct recollection that when I had corn or potatoes to hoe I tried a great many schemes to make the work seem shorter. I would hoe across the corners of the field to get short rows; hoe all the easy rows, etc., etc., but I soon exhausted all these and found the long rows longer and the hard rows harder than ever. I knew the reasoning was false, but I liked the delusion as long as it lasted, but oh! how I did hate the long hard, never ending rows, for after all they had to be done as well as the short easy

ones. It is much the same way with some coal mine men, they are always trying the short cuts, but in that case some one else always has to pay for it.

It is important that a man should "know", in fact *that is always presumed* when a man takes a position, but if "know" is all the stock in trade he has, somebody will have a very fine bill to pay.

I know a machinist who had a large pump to set up in a mine. The pump had to be placed in a position difficult of access and the mine would have to be stopped while the work of setting up was going on.

Long strings of discharge line and suction line of heavy cast pipe were required. There were many turns among a lot of mine timber under bad roof. For several weeks the superintendent had been planning to get material together and placed so as to save every possible minute when the time would come for doing the work. The machinist knew all about the work, the difficulties and the limited time. A week before the date fixed for the suspension of work, the superintendent asked the machinist if he had examined all the different parts of the pump and all the fittings, flanges, ells, tees, nipples, etc., etc., to see if they all would fit and if he had the bolts, gaskets, set screws, bends and short lengths ready. He replied that he "knew" everything was all right and that he "knew" what was wanted. The work was commenced and the pump placed. As soon as the discharge piece was lifted up to the position for bolting it it was found that the holes were so drilled that it would throw the ell out of line. The piece of course had to be re-drilled, losing several hours time. After getting that fixed and bolting on several joints of discharge line they came to a turn where a short joint was needed and upon getting the joint it was found to be too long. It was too late to get another piece and bevel gaskets were resorted to, to dodge the corner. Some more time was lost making the gaskets, but worst of all, when they came to join with the shaft discharge line the pipe would not jibe by an inch or more—the length was there but the bolts could not be driven. By this time the situation was getting desperate, the pump was running over and water going down an underground slope three thousand feet long. Something had to be done and that quick. A jack was put on the line to get the bolt holes in line (they knew that was risky) and the bolts forced in. All seemed to be right until the pump was started, then it was seen that every gasket at the forced bends was leaking. The wrenches were used with good effect until the flange at the shaft line was reached and it broke off from the terrible

strain put upon it. Down came the whole line and with it a perfect deluge of cold water, almost strangling every man about the line. The work had all to be done over again, and it took weeks to pump the dip water out. That machinist "knew" but the company paid for what he did—a bad job. The superintendent and the men paid in terrible hardship for what the machinist did not do, for they had to take the soaking and finish the work.

"Know" is a mighty poor thing to run a coal mine on, and whilst *knowing* is a *mighty thing*, PROPER ACTION IS STILL MIGHTIER.

It seems to me that if the ideal manager were analyzed he would be found to have in him something like 60% action, 20% common sense, 10% sand, 10% know and other qualities, but now days the average man thinks it takes about 99% of "know," and 1% of action. The sooner that men know that the true answer to the question, "What do we pay for?" is for results, and the best attainable results only, the better off we will all be and we will not be so terribly worked up by bills itemized,

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|----------------------|--------|
| To fixing pump | \$.75 |
| To knowing how | 24.25 |

for they will not materialize.

Now what are you going to pay for? Not for knowing I will warrant.

I "know" I have paid for what I have done and paid heavy too, but for all that I do not expect to live hereafter on what I know, and would not advise any one else to try to do it either.

Experts are necessary in all lines but not from the mere quality of expertness so much as the greater quantity of work they can do.

If a man was so expert that he could turn out six times as much work as the common man, he would not be of any value unless he did the work. It is the doing and not the knowing that makes him valuable. But you say, young men (sometimes old ones) go to college to gain knowledge, well what is the object in gaining knowledge? The object is by knowing, they can do more, and it is this doing more that people are willing to pay more for. In short it brings us back to the same old place. People are paid for results and the better the result the higher the salary that can be commanded.

Some one (I think Chauncey Depew) has said that man's success in life depends, first, upon getting a good education, and then upon how quickly he can forget it. This seems strange at the first glance yet after all it is right for just so long as a man "knows" it all he never gets much pay. It is only when he begins to do and do well, that he gets his reward.

PRESIDENT RAY: It is a pleasure to hear a paper read in such a splendid manner as Mr. Llewellyn read this, and to hear these old truths spoken in such forcible way. It is along the same line that I try to drill my boys at the Ohio State University. It is results we are after, results that count and "excuses" don't go. Are there any remarks or discussion on this paper?

MR. OYSER: It reminds me of an experience three years ago near where my friend, Mr. Keighley, lives, at Monongahela City. Some years ago I put in a large dynamo in Brown's mines at Monongahela, Pennsylvania, to do their mine work. I put the machine in for them and started it up. After I had left the Jeffrey Manufacturing Company and gone to one in Chicago, they had a coil of that big dynamo burn out. Mr. Brown shut down his mines and sent for the agent to come — the nearest one he could get — to see if he could fix the dynamo. They had an expert go from Pittsburgh and look at the machine. He said "yes," he knew what was the matter with it, and would have to send to the factory at Lynn, Massachusetts, for a part. He returned and reported this to the office. Mr. Brown said to him, "I knew what the matter was: what I wanted you to do was to go and fix it." The expert replied, "That is not my business." Mr. Brown went to another expert and told him to go down and look at the machine and if possible, fix it. He went up, and the engineer's story is that he said that if he had one more screw-driver he could fix it, — and he *would* have fixed it so nobody else could have fixed it. They had four "experts" to see it, while for four days the mine was lying idle. About this time I came to Hazelton, Pa., and stopped to see Brown. He said, "I am glad to see you." "What is the matter?" said I. He said, "I want you to go to Monongahela at once. The mine has been shut down for four days on account of trouble with the dynamo. I can tell you that the coil is burned out — I don't want you to go to tell me what is the matter, but to fix it. Can you make it go?" I said "yes," I could if anybody could. That is right in line with this paper — "Will you do it if you go?" — not to go and see what the matter is, but to fix it. I went to Monongahela on the night train, got off at the mines,

went to the engine room, broke the door down to get in as there was no one there, saw what I could do and did it; looked at the boilers, put fire under them, steamed up and before morning was done and had it running. At the proper time I blew the whistle and got the men there to work. That is a case of knowing and doing.

Take the case of a car off the track in a mine, — it is not altogether the only thing to know how to get it on. We know it must be raised from the ditch up on the track; consequently, if we have enough help can do it right away.

I move a vote of thanks to Mr. Keighley for his grand paper. (Seconded.)

MR. LLEWELLYN: I would like, if it were possible, to have every mine boss in the state of Ohio read that paper. Unfortunately, the state of things which Mr. Keighley has pointed out is very true in Ohio. Mine bosses in Ohio know *how* mines ought to be run, but not all are able to do the things which accomplish the desired results. They should understand they must become *doers* as well as "*knowers*."

MR. OYSEY: "I suggest, if possible that paper be published in tract form and sent to each mine owner and men handling machines in the state. It has come to such a pass in this and other states, that there is a lack on the part of mine owners to know and do, but they employ men in responsible positions as engineers handling high class machinery, such as dynamos, mine pumps, etc., who are incapable. It all looks very plain and easy, and when you talk to an old engineer, he says, "Yes, sir, I know all about that; I can handle that" — and three out of five are as likely to get the discharge end on the wrong end, as any other way. They knew all about it, but it kind of slipped their memory. They are hired because they are "my wife's brother," or "my uncle," a "good fellow I have known a long time, and you just have to show him once and he will know all about it." I have been for twelve years educating that class of men to run high class machinery and it has caused me many gray hairs and many nights of grief, and many nights of hard work.

A man who is to occupy a position of that kind should serve in some place an apprenticeship and learn the business, and should receive a certificate to run that class of machinery, so that we may know that he is able to do it and that the lives of the men are safe in his hands.

In ———, Pennsylvania, I put in a large plant and ran it on a sixty day's trial. The owner of the mine put in his brother-in-law as engineer, but I wouldn't let him work while I had charge. At six o'clock in the evening I got acceptance of the plant. They put the man in charge, and he knew nothing about engines. At four o'clock in the morning one of the boilers went up, blew the building down and ruined the plant — all on account of a brother-in-law who "knew all about it," "could learn it all in a few minutes." I would like to see the paper emphasized, if possible, and a copy sent to each mine owner in the state.

SECRETARY HASELTINE: A better plan would be for the members of the Institute to get the mine owners and mine bosses to come to the Institute and hear these papers read. A majority of them would not read the paper if it were sent to them. A little missionary work of this kind would help the Institute as well as the mine bosses.

PRESIDENT RAY: This is a very good paper and we have others which are very valuable and would do the mine bosses good. But we would do them more good by getting them to join the Institute so as to hear all the papers. Under the present condition of our finances, I do not believe we have money enough to publish this paper. Is there any further discussion?

MR. BROPHY: Who do you think was responsible for the machinist sending in the extra bill? As far as I am concerned I have no sympathy for the mine owners who had to pay that bill. They never put a premium on a man's knowing anything until they have to. It is more true about mining operations than anything else, that relations and others hold the positions and the cheapest grades of mechanics are employed. When a man is placed in an isolated place on a mountain or somewhere else and the whole thing depends on him, on a little knowledge

of a little thing, it is not like where you are near a machine shop. Out of three or four hundred men, only one is supposed to know anything about it, and if something happens, they find out probably they have let a good man go and hired some man because he was cheaper, and thus have thrown the whole plant out. They do not put a premium on a man who takes an interest and learns these small points. The man who hires the engineer has not sufficient knowledge to tell whether he knows anything about machinery himself or not, and the only way he could tell would be if the man had a diploma to show whether he knew anything about handling machinery. Some states find it a good thing to require men handling machinery about mines, men on cages, etc., to have some kind of training and undergo an examination in order to see whether they are fit for the position, and I think statistics show that accidents in those states are far less than they are in those which do not require such training and examination.

PROFESSOR LORD: I think the paper a most excellent one, one which I should like to put in the hands of my students. It emphasizes one point, however, which is not specifically named, that is, the quality of brains. I is not altogether knowing, not altogether doing; but that quality in man which enables him to know what to do and then do it. It is a long way of saying "brains." Men with brains are always more valuable than men without brains. There are a number of men who can do precisely what they are told to do, or do precisely what they have seen done. The number is large in comparison with the number of men who can do what the occasion demands, having never seen anything exactly like it before. That is not either knowing or doing: it is thinking, and the thinking man is always in demand. That is, where the thinking is shown by action. I never started an electric machine and never fixed a pump with a tack hammer, but I had an experience a few years ago which illustrates the same point. Several years ago, in my youth, an aunt of mine from whom I expected a Christmas present, had a clock that was out of order and refused to go. She sent it to a jeweler's, and he did not fix it; she sent it to another and he did

not fix it; she sent it to another and he did not make it run, — she sent it to three, and when it still did not go, she said that I was a pretty good thinker and she guessed I couldn't make it any worse, that I might try mending it. With the help of a rubber band and a hairpin I made it go, and it went for five years. That was not knowing and it was not very much doing, but it was seeing what was needed under those particular circumstances and doing it. That was the quality of brains. The problem for the mine man is to secure men of brains. How can he do it? By training himself to recognize brains, then be willing to pay a little premium for brains. I think that is one lesson of the paper.

PRESIDENT RAY: If there is no further discussion on this paper, we will pass to the next which has been written by our "poet laureate", — "Some Eminent American Geologists" by Captain J. L. Morris.